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23696	7590	12/13/2005	EXAMINER	
QUALCOMM, INC 5775 MOREHOUSE DR. SAN DIEGO, CA 92121			HUANG, WEN WU	
			ART UNIT	PAPER NUMBER
			2682	

DATE MAILED: 12/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/776,437

Applicant(s)

PATEL ET AL.

Examiner

Wen W. Huang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) 22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 and 23-39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 June 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claims 1-39 are pending.

Claim 22 is cancelled.

Claim Objections

1. Claim 10 is objected to because of the following informalities:

In the first line of claim 10, the word "selection" is considered as a typographical error because it lacks antecedent basis. The word "switch" is considered instead of "selection".

Appropriate correction is required.

Claim Rejections, - 35 USC § 102

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-21, 23-33, 38 and 39 are rejected under 35 U.S.C. 102(e) as being anticipated by Kitagawa (US. 6,624,613 B2).

Regarding **claim 1**, Kitagawa teaches a power source, comprising:

first and second batteries (see fig. 3, components 14x and 14y; col. 5, lines 33-34); and

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a power management module (see fig. 3, components 12x, 12y and 17) configured to operate each of the first and second batteries in a pulse current discharge mode (see fig. 3, component 25) while supplying continuous current to a load (see fig. 21 and 36; col. 11, lines 31-45 and col. 16, lines 39-52; the continuous supplying of current is insured by Step 21 of fig. 36, wherein SWX is on before SWY is off).

Regarding **claim 2**, Kitagawa also teaches the power source of claim 1 wherein the power management module comprises a switch control module (see fig. 3, component 17 and fig. 20), and a switch (see fig. 3, components 12x and 12y) configured to intermittently couple (see fig. 20 and 21, components 91 and 92) the first and second batteries to the load (see fig. 3, component 10) under control of the switch control module (see fig. 3, component 17).

Regarding **claim 3**, Kitagawa further teaches the power source of claim 2 wherein the switch comprises a first switch (see fig. 3, component 12x) configured to intermittently couple the first battery (see fig. 3, component 14x and fig. 36 components S23 and S21) to the load under control of the switch control module (see fig. 3, component 17), and a second switch (see fig. 3, component 12y) configured to intermittently couple the second battery to the load (see fig. 3, component 14y and fig. 36, components S28 and S21) under control of the switch control module (see fig. 3, component 17).

Regarding **claim 4**, Kitagawa also teaches the power source of claim 3 wherein the first and second switches each comprises a field effect transistor (see fig. 3, component "FET 21"; col. 5, lines 43-44).

Regarding **claim 5**, Kitagawa further teaches the power source of claim 3 wherein the power management module is further configured to measure (see fig. 3, components 15x and 15y) the current supplied to the load (see fig. 3, component 10), the switch control module being further configured to control the switch as a function of the measured current (see fig. 20, components 86x and 86y and col. 11, lines 36-46).

Regarding **claim 6**, Kitagawa teaches the power source of claim 5 wherein the switch control module is further configured to control the switch such that the first and second batteries are continuously coupled to the load (see fig. 36, component S21) if the measured current is below a threshold (see fig. 36, components S22 and S27).

Regarding **claim 7**, Kitagawa teaches the power source of claim 5 wherein the switch control module is further configured to control the switch such that each of the first and second batteries are intermittently (see fig. 36 components S23, S28 and S21) coupled to the load if the measured current reaches a threshold for a period of time (see fig. 36, component S31).

Regarding **claim 8**, Kitagawa also teaches the power source of claim 3 wherein the switch control module is further configured to control the switch such that the first battery is coupled to the load (see fig. 36, component S21) before removing the second battery from the load (see fig. 36, component S23 or S28).

Regarding **claim 9**, Kitagawa further teaches the power source of claim 1 wherein the switch control module is further configured to control the switch as a function of voltage measured (see fig. 10) at each of the first and second batteries (see col. 7, lines 60-66).

Regarding **claim 10**, Kitagawa teaches the power source of claim 9.

However, Kitagawa fails to teach that wherein the switch module is further configured to control the switch to couple one of the first and second batteries having the highest voltage to the load (see fig. 9 and fig. 37, component S43).

Regarding **claim 11**, Kitagawa teaches a power source, comprising:
first and second batteries (see fig. 3, components 14x and 14y; col. 5, lines 33-34); and
means for (see fig. 3, components 12x, 12y and 17) operating each of the first and second batteries in a pulse current discharge mode (see fig. 3, component 25) while supplying continuous current to a load (see fig. 21 and 36; col. 11, lines 31-45 and

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col. 16, lines 39-52; the continuous supplying of current is insured by Step 21 of fig. 36, wherein SWX is on before SWY is off).

Regarding **claims 12-15**, the dependent claims are interpreted and rejected for the same reasons as set forth above in claims 3, 5, 8 and 9, respectively.

Regarding **claim 16**, Kitagawa teaches a power source, comprising:

first and second batteries (see fig. 3, components 14x and 14y; col. 5, lines 33-34);

a switch coupled to the first and second batteries (see fig. 3, components 12x and 12y); and

a switch control module (see fig. 3, component 17) configured to operate the switch such that each of the first and second batteries are intermittently coupled to a load (see fig. 21 and 36; col. 11, lines 31-45 and col. 16, lines 39-52; the continuous supplying of current is insured by Step 21 of fig. 36, wherein SWX is on before SWY is off).

Regarding **claims 17-21, 23 and 24**, the dependent claims are interpreted and rejected for the same reasons as set forth above in claims 3-7, 9 and 10, respectively.

Regarding **claim 25**, Kitagawa teaches a method of supplying current to a load (see fig. 3, component 10) from first (see fig. 3, component 12x) and second (see fig. 3, component 12y) batteries, comprising:

connecting the first and second batteries to the load (see fig. 36, component S21);

disconnecting the first battery from the load while maintaining the connection between the second battery and the load (see fig. 36, component S23);

reconnecting the first battery to the load while maintaining the connection between the second battery and the load (see fig. 36, component S21 after S31); and

disconnecting the second battery from the load while maintaining the connection between the first battery and the load (see fig. 36, component S28).

Regarding **claim 26**, Kitagawa also teaches the method of claim 25 wherein the connection between the first battery and the load is made with a first field effect transistor (see fig. 3, components FET 21 and 12x) and the connection between the second battery and the load is made with a second field effect transistor (see fig. 3, components FET 21 and 12y).

Regarding **claim 27**, Kitagawa teaches the method of claim 25 wherein further comprising determining that the current supplied to the load crosses a threshold (see fig. 36, component S22) for a period of time (see fig. 36, component S31), the

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disconnection of the first battery from the load being in response to such determination (see fig. 36, component S23).

Regarding **claim 28**, Kitagawa also teaches the method of claim 25 further comprising determining that a voltage measured at the second battery exceeds a voltage measured at the first battery (see fig. 34, component S7), the disconnection of the first battery from the load being in response to such determination (see fig. 34, component S10).

Regarding **claim 29**, Kitagawa also teaches the method of claim 25 further comprising determining that the voltage measured at the second battery is substantially equal to the voltage measured at the first battery (see fig. 35, component S24) after the first battery is disconnected from the load (see fig. 35, component S23), the reconnection of the first battery to the load being in response to such determination that the measured voltages at the first and second batteries are substantially equal (see fig. 35, component S25).

Regarding **claim 30**, Kitagawa teaches a wireless communications device, comprising:

a processor configured to support wireless communications (see col. 1, lines 14-15; note book personal computer has a CPU capable of supporting wireless communication such as WLAN IEEE 802.11);

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first and second batteries (see fig. 3, components 14x and 14y; col. 5, lines 33-34); and

a power management module (see fig. 3, components 12x, 12y and 17) configured to operate each of the first and second batteries in a pulse current discharge mode (see fig. 3, component 25) while supplying continuous current to the processor (see fig. 21 and 36; col. 11, lines 31-45 and col. 16, lines 39-52; the continuous supplying of current is insured by Step 21 of fig. 36, wherein SWX is on before SWY is off).

Regarding **claims 31-33, 38 and 39**, the dependent claims are interpreted and rejected for the same reasons as set forth above in claims 2-4, 9 and 10, respectively.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 34, 36 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kitagawa as applied to claim 32 above, and further in view of Leifer (US. 6,459,171 B1)

Regarding **claim 34**, Kitagawa teaches the wireless communications device of claim 32.

However, Kitagawa fails to teach that wherein the processor is further configured to operate in an idle state, the switch control module further being configured to control the switch as a function of the processor state.

But, Leifer teaches that wherein the processor (see Leifer, fig. 2, component 201) is further configured to operate in an idle state (see Leifer, col. 5, lines 14-20), the switch control module further being configured to control the switch as a function of the processor state (see Leifer, col. 5, lines 20-34).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teaching of Kitagawa with the teaching of Leifer in order to improve power consumption efficiency for a system with a plurality of power sources (see Leifer, col. 1, lines 34-35).

Regarding **claim 36**, the combination of Kitagawa and Leifer also teaches the wireless communications device of claim 34 wherein the switch control module (see Leifer, fig. 2, component 217) is further configured to control the switch (see Leifer, fig. 2, components 221 and 219) such that each of the first and second batteries are intermittently (see Leifer, fig. 3) coupled to the processor (see Leifer, fig. 2, component 201) if the processor is in the traffic state (see Leifer, col. 6, lines 32-39).

Regarding **claim 37**, the combination of Kitagawa and Leifer also teaches the wireless communications device of claim 34 wherein the power control module is further configured to determine the processor state as a function of the current (see Leifer, fig. 2, component 215) supplied to the processor (see Leifer, col. 4, lines 26-29).

4. Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kitagawa and Leifer as applied to claim 34 above, and further in view of Mole et al. (US. 6,522,873B1)

Regarding **claim 35**, the combination of Kitagawa and Leifer teaches the wireless communications device of claim 34.

However, the combination of Kitagawa and Leifer fails to teach that wherein the switch control module is further configured to control the switch such that the first and second batteries are continuously coupled to the processor if the processor is in the idle state.

But, Moles et al teach a wireless communication device (see Moles et al, col. 1, lines 26-30) wherein a switch control module (see Moles et al, fig. 2, component 230) is further configured to control a switch such that the first (see Moles et al, fig. 2, component 250) and second (see Moles et al, fig. 2, component 260) batteries are continuously (see Moles et al, fig. 3, component 330, "non-slotted mode") coupled to the processor if the processor is in the idle state (see Moles et al, col. 1, lines 55-65).

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Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teaching of Kitagawa and Leifer with the teaching of Moles in order to improve wireless communication devices that are less likely to losing a communication (see Moles et al, col. 2, lines 19-21).

Response to Arguments

Applicant's arguments with respect to claims 1, 11, 16, 25 and 30 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wen W. Huang whose telephone number is (571) 272-7852. The examiner can normally be reached on 10am - 6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Doris H. To can be reached on (571) 272-7629. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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LEE NGUYEN
PRIMARY EXAMINER